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## AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings, of claims in the application:

## LISTING OF CLAIMS

- Claim 1. Cancelled
- Claim 2. Cancelled
- Claim 3. Cancelled
- Claim 4. Cancelled
- Claim 5. (Currently Amended)

  The method as claimed in claim 3 further comprising A method for protecting an avalanche photodiode (APD) of an optical receiver from overload optical signals, comprising:
- providing a feedback control loop for controlling a gain of the photodiode by measuring an optical power incident the photodiode, and computing and applying an optimal gain setting in accordance with changes in the measured optical power.
- using the measured optical power to detect a potential overload state in which the photodiode is susceptible to optical overload;
- controlling the feedback control loop so that if the potential overload state is detected, the feedback control loop is preempted and a predetermined safe gain setting is applied to the photodiode by a bias control circuit that modulates a reverse bias voltage across a depletion region of the APD; and
- determining that the measured optical power indicates that the photodiode is susceptible of to overload when the measured optical power falls below a threshold that is associated with a loss of signal condition during which no signal is received at the photodiode.
- Claim 6. (Original) The method as claimed in claim 5 wherein overriding the feedback control loop to apply the predetermined safe gain setting to the APD comprises setting the reverse bias voltage to a predefined low sensitivity gain setting throughout the loss of signal condition.
- Claim 7. Cancelled
- Claim 8. Cancelled
- Claim 9. Cancelled
- Claim 10. Cancelled
- Claim 11. Cancelled

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## Claim 12. Cancelled

- Claim 13. (Currently Amended) The apparatus as elaimed in claim 12 An apparatus for protecting a variable gain avalanche photodiode (APD) of an optical receiver from overload optical signals, the apparatus comprising:
- a feedback control circuit comprising a bias control circuit that modulates a reverse bias voltage across a depletion region of the photodiode for controlling a gain of the photodiode in response to an operating parameter of the photodiode;
- a state detector comprising an optical power monitor that computes an optical power incident the photodiode for detecting if the operating parameter indicates that the photodiode is in a potential overload state in which the photodiode is susceptible to overload, and for issuing an override command over the feedback control circuit to apply a predetermined safe gain setting to the photodiode when the potential overload state is detected; and
- wherein the state detector computes a mean optical power incident the photodiode, and determines that the photodiode is in a potential overload state if the computed optical power falls below a loss of signal threshold that is associated with a loss of signal condition during which no optical signal is received.

## Claim 14. Cancelled

- Claim 15. (Original) The apparatus as claimed in claim 14 wherein the state detector also issues a command to the photodiode to fix a sensitivity of the photodiode to the predetermined safe gain setting in the event that the state detector determines that the measured optical power falls below the LOS threshold.
- Claim 16. (Currently Amended) The apparatus as claimed in claim 13 wherein the state detector determines that the measured optical power indicates that the photodiode is susceptible of to overload when the computed optical power is above an overload threshold that is associated with an overload condition.
- Claim 17. (Original) The apparatus as claimed in claim 16 wherein the state detector issues a command to the photodiode to deactivate the photodiode when the computed optical power is above the overload threshold.
- Claim 18. (Original) The apparatus as claimed in claim 17 wherein the state detector raises an alarm that must be cleared by network management after deactivating the photodiode.
- Claim 19. Cancelled
- Claim 20. Cancelled